

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-2 and 4-6 are pending in this application. Claims 1 and 4 are amended, and Claim 6 is added by the present amendment.

Claim amendments and new claims find support in the specification as originally filed, at least at page 6, lines 24-26, page 7, line 22 to page 8, line 4, and page 8, lines 12-25. Thus, no new matter is added.

In the outstanding Office Action, Claims 4 and 5 were rejected on the grounds of nonstatutory obviousness-type double patenting in view of U.S. Publication 2004/0058696 to Moon et al. (herein “the ‘696 publication”); and Claims 1, 2, 4, and 5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin (WO 01/65885) in view of Beckmann et al. (U.S. Patent Application No. 2003/0022683; herein “Beckmann”) and Jellema et al. (U.S. Patent No. 6,707,900; herein “Jellema”).

OBVIOUSNESS-TYPE DOUBLE PATENTING

Claims 4 and 5 stand rejected on the grounds of nonstatutory obviousness-type double patenting with respect to the co-pending ‘696 publication (U.S. Application 10/663,785; the ‘785 application). Applicants intend to allow the ‘785 application to become abandoned. Thus, it is respectfully requested the double patenting rejection be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Applicants respectfully traverse the rejection of Claims 1, 2, 4, and 5 under 35 U.S.C. § 103(a) as unpatentable over Gosselin, Beckmann and Jellema, with respect to Claims 1 and 4, and new Claim 6.

Amended Claim 1 is directed to a base station supporting multicast communication. The base station includes a response signal relay that is configured to transfer response signals transmitted from a plurality of mobile stations to a radio network controller. The response signals respond to a control signal for a multicast group. In addition, the response signal relay transfers only a predetermined number of response signals to the radio network controller, and any subsequent response signal is retained. Independent Claim 4 includes similar features directed to a radio network controller or a base station.

Amended Claim 6 is also directed to a base station supporting multicast communication. However, in Claim 6, the base station processes only the predetermined number of response signals received from the at least one first mobile station, and the base station unprocesses the subsequent response signals (i.e., the base station dumps, deletes, or returns the subsequent response signals, as described in the specification at page 6, lines 24-26).

By way of background, a communication system multicast group may be formed such that common data is distributed to a plurality of mobile stations. In order for an individual mobile station to join a multicast group, a response signal may be required to be transmitted from the mobile station to a base station upon reception of a control signal from the base station. During such control signaling, the plurality of mobile stations may simultaneously provide a response signal to a corresponding base station which forwards (i.e., transfers) these response signals to a radio network controller.¹

In a non-limiting embodiment, Applicants' Figure 5 shows an example of a base station 10 that includes a control signal relay 10a that may transmit a common control signal to a plurality of mobile stations (e.g., mobile stations 11, 12, and 13, in Applicants' Figure 3). The mobile stations may transmit response signals to the common control signal, and the base

¹ Application at pages 1-2.

station 10 may include a response signal relay 10b that receives the response signals to the common control signal, transfers a predetermined number of the response signals, and retains a subsequent response signal.

For example, if the predetermined number is two, and response signals to the common control signal are received at the base station from multicast group mobile stations 10, 11, and 12, in that order, the base station transfers the response signals from the two mobile stations 10 and 11 (e.g., a plurality of mobile stations) to a controller (e.g., an upper layer controller such as radio network controller 50). The base station in this example retains the subsequent response to the common control signal from mobile station 12 (e.g., any following response signal is retained).

Applicants respectfully submit that Gosselin, Beckmann and Jellema fail to teach or suggest each of the features of the independent claims.

Gosselin describes a wireless network that supports a multicast-enabled communication protocol. In particular, Gosselin relates to a paging control method that uses multicast communication, and Gosselin indicates that “[i]n response to an incoming call addressed to a target wireless communication device, the mobile switching center communicates a first paging command to the host address associated with the base station with which the wireless communication device last updated.”² In other words, Gosselin indicates that a response signal responding to a paging command (e.g., a common control signal) for a multicast group is received from a *single* target wireless communication device (e.g., a mobile station).³ However, Gosselin does not assume that a plurality of response signals responding to a paging command (e.g., a common control signal) for a multicast group are received from a plurality of wireless communication devices (e.g., mobile devices), because according to Gosselin, only a single target wireless communication device responds

² Gosselin at page 5, lines 1-6.

³ Gosselin at page 5, lines 1-15.

to a paging command, which is used for transmitting an incoming call addressed to the single target wireless communication device.

Therefore, Gosselin fails to disclose or suggest a base station with a response signal relay that is configured to “receive a subsequent response signal to the common control signal from a second mobile station in the multicast group, the *subsequent response signal received after the predetermined number of response signals*,” as recited in Claims 1 and 6. Gosselin also fails to teach or suggest that the base station is configured to “*retain the subsequent response signal* to the common control signal received from the second mobile station in the multicast group,” as recited in Claim 1, and Gosselin fails to disclose or suggest a base station with a response signal relay that is configured to “unprocess the subsequent response signal to the common control signal received from the second mobile station in the multicast group,” as recited in Claim 6.

Beckmann describes a method of transmitting multicast messages in which resource allocation is performed in preparation for the transmission of the multicast messages. According to Beckmann, a radio network controller (RNC) can reserve resources (e.g., time slots) within a radio cell and dedicate the resources to a particular mobile station for a particular time, so that irregularly occurring data traffic may be efficiently sent to the mobile station.⁴

As discussed above and as noted in the Office Action, both Gosselin and Beckmann fail to teach or suggest a response signal relay that transfers only a predetermined number of response signals to a radio network controller, and that retains any following response signal.⁵ Further, Applicants respectfully traverse the assertion in the Office Action that Jellema teaches those features, or that it would have been obvious for one of skill in the art at

⁴ Beckmann at paragraph [0029].

⁵ Office Action at page 4, lines 2-4.

the time of invention to have combined the teachings of Jellema, Beckmann, and Gosselin to obtain the claimed inventions.⁶

Jellema describes a method of dynamically limiting a load on a Service Control Point (SCP). According to Jellema, a Service Switching Point (SSP) may intercept a telephone call, and the SSP may send a query to the SCP requesting instructions for how to treat the intercepted call.⁷ Hence, Jellema, indicates that congestion may occur if the SCP receives too many *queries* from the SSPs, regarding telephone calls intercepted by the SSPs.⁸

In other words, Jellema describes a system in which an SSP intercepts phone calls and sends queries to an SCP asking how the SSP should handle the call. However, Jellema does not teach or suggest that the telephone calls themselves are sent from the SSP to the SCP. Jellema merely indicates that *queries* about how a telephone call should be handled are sent from the SSP to the SCP, without indicating that the telephone call is ever sent to the SCP. Thus, Jellema describes receiving a call at an SSP, generating a query about the call, and sending the query about the received call to an SCP, which is different than *transferring* a received signal. Thus, it is respectfully submitted that Jellema fails to teach or suggest that a response signal relay is configured to “transfer . . . response signals received from the at least one first mobile station to a controller,” as recited in Claim 1, and as similarly recited in Claim 6.

Furthermore, Jellema fails to teach or suggest limiting the number of response signals transmitted from the base station to an upper controller. In particular, Jellema only indicates that when a counter number which indicates the number of queries not responded to from the SCP (e.g., an upper controller) reaches an upper threshold (i.e., a predetermined maximum

⁶ Office Action at page 4, lines 17-19.

⁷ Jellema at column 1, lines 10-13.

⁸ Jellema at column 1, lines 14-15.

value), that is after the SCP has overflowed, the call is rejected.⁹ Therefore, the approach according to Jellema cannot be used to decide a number of queries to be transmitted to the SCP, because the base station of Jellema only rejects calls from a mobile station when the SCP has already overflowed. Thus, Jellema also fails to teach or suggest a base station configured to “transfer only the predetermined number of response signals received from the at least one first mobile station to a controller,” as recited in Claim 1, and as similarly recited in Claim 6, for that independent reason as well.

In light of the deficiencies noted above with respect to Gosselin and Beckman, as well as the comments above regarding Jellema, Claims 1 and 6 are believed to patentably define over Gosselin, Beckmann, and Jellema.

In addition, each of the queries of Jellema are generated by the SSPs in response to different telephone calls intercepted by the SSPs. Accordingly, the queries of Jellema do not respond to a control signal, and do not respond to a control signal in a multicast group. Thus, the queries of Jellema are different than the response signals that respond to a control signal for a multicast group. Accordingly, it is respectfully submitted that Jellema fails to teach or suggest a response signal relay configured to “receive a predetermined number of response signals to the common control signal from at least one first mobile station in the multicast group,” as recited in Claims 1 and 6. In addition, Jellema fails to teach or suggest a controller that “performs a predetermined processing on . . . response signals . . . responding to a control signal for a multicast group,” as recited in Claim 4.

Thus, Claims 1, 4, and 6 are believed to patentably define over Gosselin, Beckmann, and Jellema for that independent reason, as well.

⁹ Jellema at column 2, lines 18-25 and 33-40.

Further, Jellema indicates that a processing capability of the SCP may be overloaded by receiving too many queries regarding calls intercepted by the SSPs.¹⁰ To address the problem of the SCP receiving too many queries about telephone calls, Jellema uses a counter to track a “given set of call criteria,” such as a particular dialed number.¹¹ Further, Jellema indicates that the counter is incremented in step 24 of Fig. 2 when a call is intercepted by the SSP, and the counter is decremented when the SSP receives a response to the query from the SCP.¹²

Thus, the counter of Jellema keeps track of the number of queries from the SSP that have not yet been answered by the SCP (e.g., unanswered queries). When the number of unanswered queries increases beyond a maximum value, the SCP is considered to be overloaded.¹³ In other words, Jellema describes counting how many queries are awaiting answers, and Jellema does not teach or suggest transferring only a predetermined number of queries. Thus, even if one were to incorrectly consider the queries to be equivalent to the claimed response signals responding to a control signal, Jellema does not teach or suggest that a predetermined number of queries are transmitted from the SSP to the SCP. Instead, Jellema indicates that an SSP rejects calls when (and therefore does not send a query for those calls) when a predetermined number of queries are presently unanswered by the SCP.

Therefore, it is respectfully submitted that Jellema fails to teach or suggest a response signal relay that is configured to “transfer only the predetermined number of response signals,” as recited in Claim 1. Further, it is respectfully submitted that Jellema fails to teach or suggest that a “controller performs processing on only the predetermined number of response signals,” as recited in Claim 4. In addition, it is respectfully submitted that Jellema

¹⁰ Jellema at column 1, lines 10-16.

¹¹ Jellema at column 2, lines 15-16.

¹² Jellema at column 2, lines 19-25.

¹³ Jellema at Figure 2.

fails to teach or suggest a response signal relay that is configured to “process only the predetermined number of response signals,” as recited in Claim 6.

Thus, Claims 1, 4, and 6 are believed to patentably define over Gosselin, Beckmann, and Jellema for that independent reason.

In addition, Jellema indicates that when the SCP successfully replies to queries, thereby causing the number of unanswered queries to be reduced below the maximum counter value, “the SSP is again able to answer call attempts.” In other words, Jellema indicates that SSPs stop intercepting calls and therefore stop sending queries about intercepted calls to a SCP, when the SCP has too many outstanding unanswered queries. However, according to Jellema, if the number of outstanding unanswered queries subsequently falls, the SSP can again intercept calls and send queries about the handling of the intercepted calls to the SCP. Thus, even if one were to incorrectly consider the queries of Jellema to be equivalent to the claimed transferred response signals responding to a control signal for a multicast group, Jellema fails to teach or suggest that only a predetermined number of queries are sent, and any following queries are retained. Instead, Jellema indicates that queries are halted while a number of unanswered queries is high, and the queries continue when the number of unanswered queries is reduced.

Accordingly, it is respectfully submitted that Jellema also fails to teach or suggest a response signal relay that is configured to “retain the subsequent response signal to the common control signal received from the second mobile station,” as recited in Claim 1. Further, it is respectfully submitted that Jellema also fails to teach or suggest that a “controller performs processing on only the predetermined number . . . and a subsequent response signal is unprocessed,” as recited in Claim 4. Moreover, it is respectfully submitted that Jellema also fails to teach or suggest a response signal relay that is configured to

“unprocess the subsequent response signal to the common control signal received from the second mobile station,” as recited in Claim 6.

Thus, Claims 1, 4, and 6 are believed to patentably define over Gosselin, Beckmann, and Jellema for that independent reason, as well.

Accordingly, Applicants respectfully request that the rejection of Claims 1-2 and 4-5 under 35 U.S.C. § 103 be withdrawn.

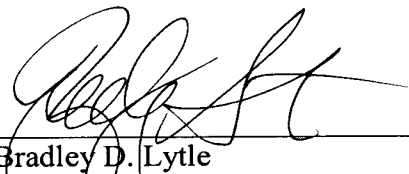
Therefore, Applicants respectfully submit that independent Claims 1, 4, and 6, and claims depending therefrom, are allowable.

CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present application, including Claims 1, 2, and 4-6, is patentably distinguished over the prior art, and therefore in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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